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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,503	11/19/2001	Hark-Soo Kim	678-651(P9685)	3922

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EXAMINER

PHAM, TUAN

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/997,503	Applicant(s) KIM, HARK-SOO	
	Examiner TUAN A PHAM	Art Unit 2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-10 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-6 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-2, and ~~4~~6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glocker (U.S. Patent No.: 6,317,608) in view of King (U.S. Patent No.: 6,300,827) and further in view of Nanni et al. (U.S. Patent No.: 6,389,269, hereinafter, "6,389,269").

Regarding claim 1, Glocker teaches a power rate enhancement circuit for a power amplifier in a dual mode mobile phone including an RF (Radio Frequency) power amplifier for amplifying an RF input signal, (see figure 1, power amplifier 10) the circuit comprising:

a GSM matching circuit connected to an output end of the RF power amplifier, for matching an output impedance of the RF power amplifier in a GSM mode of operation (see figure 1, power amplifier 10, GSM matching circuit 18, col.6, ln.23-53);

an DCS matching circuit connected to the output end of the RF power amplifier, for matching the output impedance of the RF power amplifier in an DCS mode of operation (see figure 1, power amplifier 10, DCS matching circuit 30, col.6, ln.65-68, col.7, ln.1-30); and

an RF switch for selecting one of the GSM matching circuit or the DCS matching circuit, according to a mode control signal (see figure 1, switch 16, 28, col.6, ln.23-67).

It should be noticed that Glocker fails to clearly teach a duplexer connected to an antenna, and an isolator connected to the duplexer. However, King teaches such features (see figure 8, antenna 810, duplexer 808, isolator 806, col.10, ln.1-35) for a purpose of transmitting and receiving on nearly adjacent frequencies by using a common antenna.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of a duplexer connected to an antenna, and an isolator connected to the duplexer, as taught by King, into view of Glocker in order to enable RF transceiver to simultaneously transmit and receive on nearly adjacent frequencies by using a common antenna.

Glocker and King, in combination, fails to clearly teach the CDMA matching circuit and the AMPS matching circuit. However, Nanni teaches such features (see

figure 2, AMPS matching circuit 204, CDMA matching circuit 206, col.3, ln.40-63, col.4, ln.15-39) for a purpose of supporting both digital and analog signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the CDMA matching circuit and the AMPS matching circuit, as taught by Nanni, into view of Glocker and King in order to support both low and high bands frequency.

Regarding claim 2, King further teaches the power rate enhancement circuit wherein the CDMA matching circuit comprises an inductor connected between the output end of the RF power amplifier and an isolator (see figure 8, power amplifier 500, inductor L2, isolator 806).

Regarding claim 6, Glocker further teaches the power rate enhancement circuit wherein the RF switch is a diode (see figure 4, col.8, ln.27-45).

3. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glocker (U.S. Patent No.: 6,317,608) in view of King (U.S. Patent No.: 6,300,827) and further in view of Nanni et al. (U.S. Patent No.: 6,389,269, hereinafter, "6,389,269) as applied to claim 1 above, and further in view of Zhang et al. (U.S. Patent No.: 6,313,698, hereinafter, "Zhang").

Regarding claims 4-5, Glocker, King, and Nanni, in combination, Fails to clearly teach the switch are a mechanical switch and field effect transistor switch. However, Zhang teaches such features (see figure 2B, switch 272, 274, col.7, ln.55-60) for a purpose of switching to connect a particular element or device each other.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the switch are a mechanical switch and field effect transistor switch, as taught by Zhang, into view of Glocker, king, and Nanni in order to connect a particular element or device each other.

Allowable Subject Matter

4. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. Claims 7-10 are allowed.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Boesch et al. (U.S. Patent No. 6,188,877), Francisco et al. (U.S. Patent No. 6,128,508), Baker et al. (U.S. Patent No. 6,606,483), and Sahota (U.S. Patent No. 5,880,631) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s). These references are also concerned for supporting the system and method for using multi-band power amplifier with reduce power loss.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2643
November 30, 2004
Examiner

Tuan Pham


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600